

# MANDATING REPAIR SCORES

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## ABSTRACT

Restrictions on the repair of consumer goods have generated no shortage of policy proposals. This Article considers the empirical and legal case for one particular intervention—requiring firms to calculate and disclose their products’ scores on a uniform reparability index. These repair scores would provide consumers with salient information at or before the point of sale, enabling them to compare products on the basis of the ease and cost of repair. There is considerable empirical research, including assessments of France’s implementation of a similar requirement in recent years, suggesting that repair scores would both inform and empower consumers. Despite likely First Amendment challenges in the United States, such a regime is likely to survive constitutional scrutiny.

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### I. INTRODUCTION

When it comes to addressing the problems of repair markets, there are four primary justifications for legal intervention—respecting end-user autonomy, encouraging competition, reducing environmental harm, and facilitating consumer choice. I have written at length about each of these cases for legislative and regulatory fixes to the contemporary state of repair.<sup>1</sup> Although these rationales are undoubtedly intertwined, here, I want to focus primarily on the last rationale. How can the law make it easier for consumers to act on their preferences for durable, repairable devices?

Some may object that consumer behavior—as shown in the form of the nearly 1.5 billion smartphones<sup>2</sup> or the hundred million or so Apple AirPods sold each year<sup>3</sup>—reveals precisely how little we care about reparability. But that response is too quick to absolve device makers of their responsibility for shaping and manipulating consumer behavior. And, it is too dismissive of the mounting evidence that consumers respond predictably and favorably to clear, accurate information about the ease of repairing a device. Consumers prefer reparability. Too often, however, firms withhold or obscure the information necessary to assess the products they sell.

This Article outlines the evidence that consumers value repair, are often caught unaware of repair restrictions, and would make different purchasing choices if information about reparability were more readily available. These conclusions are borne out not only by experimental and survey data described in Part II, but the on-the-ground results of the first mandatory reparability

1. See generally AARON PERZANOWSKI, *THE RIGHT TO REPAIR: RECLAIMING THE THINGS WE OWN* (2022).

2. Manasi Sakpal, *Gartner Says Global Smartphone Sales Grew 6% in 2021*, GARTNER (Mar. 2, 2022), <https://www.gartner.com/en/newsroom/press-releases/2022-03-01-4q21-smartphone-market-share>.

3. Samantha Murphy Kelly, *How AirPods became Apple's hottest product*, CNN BUS. (Oct. 19, 2021, 4:08 PM), <https://www.cnn.com/2021/10/19/tech/airpods-3/index.html>. AirPods are notoriously difficult to repair. See *AirPods Teardown*, iFIXIT (Dec. 20, 2016), <https://www.ifixit.com/Teardown/AirPods+Teardown/75578>.

index for consumer goods, implemented in 2021 in France and detailed in Part III. The French approach, while far from perfect, suggests that requiring firms to measure and prominently disclose product reparability can shift consumer behavior and incentivize the design of more repairable products. Part IV argues that as legislators and regulators in the United States consider the most effective tools to address the rampant repair restrictions device makers impose, they should not overlook the potential power of mandated disclosures to internalize costs and recalibrate consumer behavior. Justified as a corrective to unfair or deceptive practices, a rule demanding device makers inform consumers of how easy—or difficult—their products are to fix is well within the power of either Congress or the Federal Trade Commission. Moreover, as Part V argues, such a rule is highly likely to withstand the First Amendment challenges device makers would almost certainly raise.

## II. REPAIR AND CONSUMER PREFERENCES

A number of empirical studies have explored consumers' relationship to repair. They confirm that consumers expect to be able to repair the products they buy, are often unaware of repair restrictions, and would make different purchasing decisions on the basis of more complete information about reparability.

My 2021 study of U.S. consumers revealed that they expect to be able to repair smartphones, tablets, smart speakers, digital cameras, and smart refrigerators.<sup>4</sup> Across device categories, 83% of consumers agreed with the proposition that they have the right to repair devices they purchase themselves or to take them to the repair shop of their choice.<sup>5</sup> 59% reported that they would be very or somewhat surprised to learn that a manufacturer limited their ability to repair a device they purchased.<sup>6</sup> When asked to describe in their own words how they would feel if they learned of repair restrictions, consumers offered anger, disappointment, frustration and annoyance most often.<sup>7</sup> Others said they would feel cheated, conned, deceived, scammed, or swindled.<sup>8</sup>

Not only do consumers expect reparability—this expectation is material to their purchase decisions. When asked if their choices would be influenced by a manufacturer's decision to limit the reparability of a device, more than 70%

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4. See generally Aaron Perzanowski, *Consumer Perceptions of the Right to Repair*, 96 IND. L.J. 361 (2021). The sample was representative of the U.S. population with respect to sex, age, and income according to census data. *Id.* at 380.

5. *Id.* at 382.

6. *Id.* at 383.

7. *Id.*

8. *Id.*

of consumers said they were less likely to purchase such a device.<sup>9</sup> Nearly as many reported they would pay somewhat or much less for a device with repair restrictions.<sup>10</sup> A recent Consumer Reports survey of more than 2000 U.S. residents reinforces this conclusion. When asked how important reparability is when making a new purchase, 96% reported it was very important or somewhat important for vehicles; 91% for large appliances, and 77% for smartphones and tablets.<sup>11</sup>

A European Commission study reached similar results. European consumers were asked if they would prefer to receive better information about how long products last and their ease of repair. Not surprisingly, an overwhelming majority said yes.<sup>12</sup> Specifically, consumers believed that information would be most useful at the point of purchase or while comparing potential purchases.<sup>13</sup> That study also incorporated an experiment that measured the degree to which repair information influences purchase decisions. Consumers were told they needed to purchase products—vacuum cleaners, dishwashers, televisions, smartphones, and coats—on an online shopping site. They were shown the name, picture, and price for six different models within each product category. In addition, a test group of consumers was shown information about the reparability of each model, scored on the standard A-G scale familiar from EU energy labels, accompanied by a wrench and screwdriver icon. Consumers who saw these scores were twice as likely to choose the most repairable option, compared to those who did not.<sup>14</sup> Moreover, consumers were willing to spend more on repairable products. That price premium ranged from 29 to €54 for vacuum cleaners to €77 to €171 for televisions.<sup>15</sup>

Although surveys and experiments can be imperfect predictors of real-world behavior, these studies bolster the intuitions that consumers value reparability and that better access to information will shape their behavior. As Part III details, evidence from France over the past year further reinforces these conclusions.

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9. *Id.* at 384.

10. *Id.* at 385.

11. CR SURV. RSCH. DEP'T, RIGHT TO REPAIR 2021: NATIONALLY REPRESENTATIVE MULTI-MODE SURVEY (2022), [https://article.images.consumerreports.org/prod/content/dam/surveys/Consumer\\_Reports\\_Right\\_to\\_Repair\\_Survey\\_2021](https://article.images.consumerreports.org/prod/content/dam/surveys/Consumer_Reports_Right_to_Repair_Survey_2021).

12. EUR. COMM'N, BEHAVIOURAL STUDY ON CONSUMERS' ENGAGEMENT IN THE CIRCULAR ECONOMY (2018), [https://ec.europa.eu/info/sites/default/files/ec\\_circular\\_economy\\_final\\_report\\_0.pdf](https://ec.europa.eu/info/sites/default/files/ec_circular_economy_final_report_0.pdf).

13. *Id.* at 152–55.

14. *Id.* at 159–61.

15. *Id.* at 165–69.

### III. THE FRENCH REPARABILITY INDEX

The idea of rating devices on the basis of reparability isn't entirely new. Researchers have developed a number of rubrics for measuring reparability.<sup>16</sup> For well over a decade, iFixit has scored laptops, smartphones, game consoles, and other consumer goods on a 1–10 scale, based on their ease of repair.<sup>17</sup> As helpful as those scores can be, most consumers do not know to consult them before they buy a device. Indeed, reparability often is not a top-of-mind consideration at the time of purchase. Consumers are focused on price, new features, and aesthetics when they buy new devices. Too often, their attention turns to repair only months or years down the line, when the device malfunctions. If consumers knew at the point of purchase, for example, whether replacement parts would be available at a reasonable price or whether a device was user-reparable, they would be better positioned to make fully informed choices.

To address the market's failure to reliably provide this information, France introduced a mandatory reparability labeling system for specified categories of consumer goods in 2021.<sup>18</sup> Advertisements and product packaging for laptops, lawn mowers, smartphones, televisions, and washing machines must bear a graphic like the one below.<sup>19</sup> Those labels prominently display a reparability score on a 1–10 scale and a color-coded graphic—red for low scores, green for high, and yellow for middling ones. Scores are based on five equally weighted criteria: documentation, like manuals and repair instructions; the disassembly process, including the number of steps, tools required, and types of fasteners used; access to spare parts, delivery times, and availability to

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16. See, e.g., MAURO CORDELLA, FELICE ALFIERI & JAVIER SANFELIX, EUR. COMM'N, ANALYSIS AND DEVELOPMENT OF A SCORING SYSTEM FOR REPAIR AND UPGRADE OF PRODUCTS (2019).

17. See *iPhone First Generation Teardown*, IFIXIT (June 29, 2007), <https://www.ifixit.com/Teardown/iPhone+1st+Generation+Teardown/599>.

18. Loi 2020-105 du 10 février 2020 relative à la lutte contre le gaspillage et à l'économie circulaire [Law 2020-105 of 10 February 2020 Regarding a Circular Economy and the Fight Against Waste].

19. Specifically, the law requires that “sellers of electrical and electronic equipment as well as those using a website, a platform or any other online distribution channel in the context of their commercial activity in France shall inform the consumer free of charge, at the time of the act of purchase, by way of marking, labeling, display or any other appropriate process, of the reparability index of this equipment. The manufacturer or importer is responsible for making this information available to the public electronically, in an easily reusable format that can be used by an automated processing system in an aggregated form.” *Id.*

independent providers; the price of spare parts; and various considerations specific to the product type.<sup>20</sup>

Figure 1: Caption



Although the French index has been in effect for little more than a year, the preliminary evidence lends strong support to the underlying theory that repair scores are an effective information-forcing mechanism that empowers consumers and increases the salience of reparability. Awareness of the repair index is high among French consumers. One study, conducted by Halte à L'Obsolescence Programmée (HOP), found that 55% of the French public was aware of the index.<sup>21</sup> Another study, sponsored by Samsung, concluded that 76% of the French population knew about it.<sup>22</sup> Beyond mere recognition, 66% of respondents said they fully or somewhat understand how the repair score is calculated.<sup>23</sup> While there is room for improvement when it comes to

20. MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE, INSTRUCTIONS MANUAL FOR THE CALCULATION OF THE REPAIRABILITY INDEX OF ELECTRICAL AND ELECTRONIC EQUIPMENTS (2021).

21. HALTE À L'OBSOLESCENCE PROGRAMMÉE, THE FRENCH REPAIRABILITY INDEX: A FIRST ASSESSMENT ONE YEAR AFTER ITS IMPLEMENTATION (2022), <https://www.halteobsolescence.org/wp-content/uploads/2022/02/Rapport-indice-de-reparabilite.pdf> [hereinafter HOP STUDY].

22. *Indice de réparabilité: le second baromètre Samsung/Ademe confirme l'intérêt des Français*, NEOMAG (Sept. 2, 2021), <https://www.neomag.fr/article/9600/indice-de-reparabilite-le-second-baromere-samsung-ademe-confirme-linteret-des-francais>.

23. HOP STUDY, *supra* note 21.

consumers' understanding of specific elements of the repair index, one goal of reporting an overall score on a ten-point scale is to simplify complex information and reduce the knowledge and research necessary for informed decision making.

More worryingly, only 28% of those who purchased relevant devices in 2021 reported encountering the repair index. Compliance with the labeling requirement appears to be high when it comes to smartphones, but other product categories, like laptops, are lagging behind, suggesting a need for more robust enforcement against some device makers.<sup>24</sup> That said, among those consumers who did encounter repair scores, 76% reported that the index was helpful in making their final purchase decision, and 91% indicated they would recommend a friend rely on the index when purchasing a new smartphone.<sup>25</sup> Although no comprehensive study of sales data has revealed the market impact of repair scores, an experiment using the French index, consistent with prior research, demonstrates that consumers are significantly more likely to purchase smartphones with higher repair scores.<sup>26</sup>

But the French approach is hardly perfect. There are two central criticisms. First, scores are calculated by device makers.<sup>27</sup> Given their interest in higher marks, we might be reasonably suspicious of self-reported scores. Independent evaluation of products can also yield lower overall scores. When HOP undertook its own scoring of a variety of products, its results were as much as 1.5 points lower on the index's ten-point scale than those calculated by the manufacturer.<sup>28</sup> Of course, an independent evaluation of every consumer device, either by a government agency or a third-party organization, would impose significant costs. Anticipating these concerns, the French index requires manufacturers to publish a scoring protocol for each product so that consumers, competitors, and others can scrutinize their claims. Unfortunately, those disclosures are not always readily available and omit the sort of granular disclosures experts would need to fully assess scores.<sup>29</sup> To address these problems, heightened disclosure requirements, more consistent enforcement, and a public database of all scoring protocols would all be helpful tweaks, as would randomized auditing of self-reported scores and meaningful penalties when companies pad their grades.

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24. HOP STUDY, *supra* note 21.

25. HOP STUDY, *supra* note 21.

26. HOP STUDY, *supra* note 21.

27. *See* MINISTÈRE DE LA TRANSITION ÉCOLOGIQUE, *supra* note 20.

28. *See* HOP STUDY, *supra* note 21 (scoring a Philips television at 5.5, despite an official score of 7).

29. HOP STUDY, *supra* note 21

Second, regardless of who does the scoring, there is reason to suspect the index is too forgiving. Some points are just too easy to earn. For smartphones and laptops, simply providing information about software updates—identifying them as bug fixes, security patches, or upgrades—earns a product a full point on the overall score.<sup>30</sup> The ability to reset the device’s operating system and firmware ups the score by another half point.<sup>31</sup> Because the five primary criteria are equally weighted, it is relatively easy for a device to earn seemingly high marks even when spare parts can’t be obtained or disassembly is prohibitively difficult. A product that scores a distressingly low 7 out of 20 on the disassembly metric, can still earn an overall score of 8 out of 10.<sup>32</sup> Given the ambiguity of certain criteria, firms can play fast and loose with their scores in ways that give consumers false impressions about reparability.<sup>33</sup>

Inflated scores threaten to undermine the central goals of the index. Since few products have low scores, they tend to cluster together, making it harder for consumers to comparison shop on the basis of reparability. Score differences that look trivial might in fact represent significant differences between products. Generous scores could also lead consumers to overestimate the reparability of specific devices. They might, for example, see a 6.1 score for a washing machine and assume that means it’s more repairable than average, despite the fact that it is among the lowest scores in the product category. The index’s color-coding system reinforces this worry. Scores of 8–10 earn a vibrant green logo; 6–7.9 are light green; 4–5.9 are yellow; 2–3.9 are orange, and 0–1.9 are red. Few products bear orange or red symbols. The iPhone 11 scores an abysmal 4.6, earning it a rather ambiguous yellow label.<sup>34</sup> If one of the goals of the index is to spur competition on the basis of reparability, clearer signals are needed. Otherwise, manufacturers will lack the incentives to prioritize repairable design.

These faults, while significant, are far from insurmountable. As the index evolves, its scoring system should account for these early lessons. Criteria might be added, removed, or given different relative weights. HOP has suggested minimum thresholds as another promising reform. If a device scores too low on key criteria like part availability or disassembly, its overall score would be capped regardless of how well it performs on other metrics like

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30. MINISTERE DE LA TRANSITION ECOLOGIQUE, *supra* note 20.

31. MINISTERE DE LA TRANSITION ECOLOGIQUE, *supra* note 20.

32. HOP STUDY, *supra* note 21.

33. HOP STUDY, *supra* note 21.

34. Sophie Charara, *The most (and least) repairable Apple products, ranked*, WIRED (Apr. 17, 2021, 6:00 AM), <https://www.wired.co.uk/article/most-repairable-apple-products>; see *Indice de réparabilité*, Ministère de la transition écologique et de la Cohésion des territoires, (Aug. 30, 2022), <https://www.ecologie.gouv.fr/indice-reparabilite>.



documentation.<sup>35</sup> France may well decide to update its existing rules, and as other jurisdictions consider repair indices of their own, opportunities to improve on France's experience will emerge. Spain has announced plans for its own reparability index.<sup>36</sup> Even more promisingly, the European Parliament has embraced an aggressive repair agenda that includes harmonized, mandatory, EU-wide repair scores among other disclosures to consumers.<sup>37</sup> The next Part will consider how such an approach could be implemented under U.S. law.

#### IV. REPAIR SCORES IN THE U.S. LEGAL FRAMEWORK

Mandatory disclosure regimes are hardly unfamiliar in the United States. Loan providers must meaningfully disclose credit terms to consumers.<sup>38</sup> Car manufacturers are required to report accurate labeling of vehicle fuel economy. Makers of foodstuffs have to disclose artificial colors and flavors.<sup>39</sup> Tobacco companies must acknowledge the health risks of cigarettes.<sup>40</sup> Apparel makers must disclose the use of fur in their garments.<sup>41</sup> Manufacturers of home insulation are obligated to share its r-value,<sup>42</sup> and amplifier makers must inform consumers about the power output of home entertainment devices.<sup>43</sup> Throughout the U.S. economy, thousands of mandatory labeling laws help consumers gather accurate information about products and services.<sup>44</sup>

When product characteristics are important to consumers but hard for them to evaluate independently, disclosure is especially important. Often, market forces will generate sufficient incentives for disclosure, rendering regulation less necessary. If a new car gets better gas mileage than the

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35. HOP STUDY, *supra* note 21.

36. *Consumo etiquetará los productos eléctricos y electrónicos en función de su reparabilidad*, LA MONCLOA (Mar. 15, 2021), [https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/consumo/Paginas/2021/150321-etiqueta\\_reparabilidad.aspx](https://www.lamoncloa.gob.es/serviciosdeprensa/notasprensa/consumo/Paginas/2021/150321-etiqueta_reparabilidad.aspx).

37. *Right to repair: MEPs want more durable and more easily repairable products*, EUR. PARLIAMENT (Apr. 7, 2022, 12:46 PM), <https://www.europarl.europa.eu/news/en/press-room/20220401IPR26537/right-to-repair-meps-want-more-durable-and-more-easily-repairable-products>.

38. 15 U.S.C. § 1601.

39. *See* 40 C.F.R. pts. 86 and 600; 71 Fed. Reg. 77,872 (Dec. 27, 2006).

40. 21 C.F.R. pt. 1141; 61 Fed. Reg. 44,615–44,618 (Aug. 28, 1996).

41. 15 U.S.C. § 69(b).

42. 16 C.F.R. pt. 460.

43. 16 C.F.R. pt. 432.

44. *See* Pharm. Care Mgmt. Ass'n v. Rowe, 429 F.3d 294, 316 (1st Cir. 2005) (noting the “literally thousands of similar regulations on the books—such as product labeling laws, environmental spill reporting, accident reports by common carriers, SEC reporting as to corporate losses and (most obviously) the requirement to file tax returns to government units”).

competition, we can bet the marketing department will make sure consumers know it. But we cannot always rely on the market to provide complete or accurate information. Firms have incentives to hide or minimize harmful ingredients or effects, as the tobacco industry did for decades.<sup>45</sup> Those incentives are particularly troublesome for industry-wide behavior. There is also the problem of inconsistent or ambiguous disclosures. Imagine a world in which each car maker came up with its own standards and tests for fuel efficiency. How would consumers compare Honda's claimed forty mile-per-gallon rating for a sedan to Toyota's supposed forty-two mile-per-gallon vehicle without a careful study of their methodologies? Mandatory disclosure regimes can bring greater uniformity that facilitates meaningful comparisons between products.

Not only can compelled disclosures increase the flow of material information to consumers, they can also correct deceptive or misleading perceptions created by marketing and other practices of producers. Again, tobacco companies are instructive. For years, their ads featured physicians touting the supposed benefits of one brand over another, giving the false impression that cigarettes were good for you.<sup>46</sup> The case for mandated disclosure, as a matter of both policy and law, is strongest when manufacturers explicitly or implicitly mislead consumers about the nature of their own products or those of competitors.

Although device makers typically avoid making false claims about repair—preferring instead to keep consumers focused on vague notions of newness and innovation—examples of prominent firms offering false or misleading statements are not terribly difficult to come by. John Deere has consistently misrepresented its position on repair for years. Despite aggressively anti-repair design choices and policies, Deere's marketing materials maintain that “repairability is designed into every tractor we build.”<sup>47</sup> And one of Deere's trade associations announced an elaborate “signing ceremony” for a memorandum of understanding with the California Farm Bureau that promised to make software tools necessary for diagnosis and repair available

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45. *See* United States v. Philip Morris USA, Inc., 449 F. Supp. 2d 1, 852 (D.D.C. 2006) (noting that “over the course of more than 50 years, Defendants lied, misrepresented, and deceived the American public, including smokers and the young people they avidly sought as “replacement smokers,” about the devastating health effects of smoking and environmental tobacco smoke...”).

46. *See, e.g.,* *Outrageous vintage cigarette ads*, CBS NEWS (July 27, 2014, 7:35 AM), <https://www.cbsnews.com/pictures/outrageous-vintage-cigarette-ads>.

47. *Self-Repair Made Easy*, JOHN DEERE, [perma.cc/Z4GF-ZD4K](https://perma.cc/Z4GF-ZD4K) (last visited Feb. 23, 2022).

to farmers.<sup>48</sup> But years later, Deere and its dealers continued to drag their feet when it came time to make good on that promise.<sup>49</sup> Eventually, after public shaming and press attention, Deere made the software available, but only at an exorbitant subscription rate.<sup>50</sup>

Perhaps less overtly, Apple advertises prices for “service” for iPads, AirPods, and other devices.<sup>51</sup> What the company fails to make clear, however, is that “service” does not mean a consumer’s device will be repaired. Instead, it will be replaced with a new or refurbished one. For many products, Apple simply does not offer repair. For those who value reparability, this is a potentially material omission. Apple also trains its employees to withhold crucial repair information from consumers, warning them that third-party parts and repairs will not work as well or may result in missing features.<sup>52</sup> But they fail to disclose that Apple’s own software restrictions are often the cause of performance issues and warning messages after third-party repairs.<sup>53</sup>

Even without an explicit misrepresentation, these sorts of omission of material information in a commercial context are regarded as deceptive.<sup>54</sup> If consumers come away with a false understanding because of a firm’s failure to disclose information, they have been misled. That is true even when the misunderstanding is a byproduct of consumer expectations rather than affirmative representations made by the seller.

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48. Jason Koebler & Matthew Gault, *John Deere Promised Farmers It Would Make Tractors Easy to Repair. It Lied*, VICE (Feb. 18, 2021), <https://www.vice.com/en/article/v7m8mx/john-deere-promised-farmers-it-would-make-tractors-easy-to-repair-it-lied>.

49. *Id.*

50. *See* Complaint for Action to Stop Unfair Methods of Competition and Unfair and Deceptive Trade Pract., by Deere & Co. (Mar. 3, 2022), [https://drive.google.com/file/d/1h6HVLfQ491dyAhcdYM-w5v\\_FpVKmtOB3/view](https://drive.google.com/file/d/1h6HVLfQ491dyAhcdYM-w5v_FpVKmtOB3/view).

51. *See, e.g., Apple Watch Service and Repair*, APPLE, <https://support.apple.com/watch/repair/service/pricing> (last visited Sept. 12, 2022); *iPad Repair & Service*, APPLE, <https://support.apple.com/ipad/repair/service> (last visited Sept. 12, 2022); *AirPods Replacement, Repair, & Service*, APPLE, <https://support.apple.com/airpods/repair/service> (last visited Sept. 12, 2022).

52. Matthew Gault, *Leaked Apple Training Videos Show How It Undermines Third-Party Repair*, VICE (Sept. 21, 2021, 6:00 AM), <https://www.vice.com/en/article/5dbv83/leaked-apple-training-videos-show-how-it-undermines-third-party-repair>.

53. Chris Welch, *Apple’s iPhone 11 and 11 Pro will show a warning on your lock screen if they can’t verify a replaced screen*, VERGE (Sept. 25, 2019, 3:23 PM), <https://www.theverge.com/2019/9/25/20884287/apple-iphone-11-pro-max-display-screen-replacement-verification-warning>; Kevin Purdy, *The New “Important” iPhone Camera Message Is Another Bad Omen*, iFIXIT (Jan. 27, 2021), <https://www.ifixit.com/News/48768/the-new-important-iphone-camera-message-is-another-bad-omen>.

54. *See, e.g.,* Mkt. Dev. Corp., 95 F.T.C. 100, 212 (1980) (failing to disclose extra charges or conditions imposed on use of vacation certificates); Peacock Buick, Inc., 86 F.T.C. 1532, 1557–58 (1975) (failing to disclose handling and service fees), *aff’d*, 553 F.2d 97 (4th Cir. 1977).

Congress could require repair scores on consumer goods, whether to correct deceptive representations and omissions, or more generally to improve the quality and quantity of information available to consumers. There have been some promising signs that Congress is taking repair seriously.<sup>55</sup> The repair agenda has significant bipartisan support among voters.<sup>56</sup> But given the legislative inertia even broadly popular policies face, the FTC offers a more promising avenue for implementing a repair index.

The Commission has already been active in this space, issuing its Nixing the Fix in 2021 and a policy statement on repair a year later, prompted in part by the Executive Order on Competition from the Biden White House.<sup>57</sup> While the FTC could make significant progress by more aggressively enforcing existing law, repair is a policy question ripe for rulemaking. Those rules could be justified under at least three theories. First, they could, consistent with the Nixing the Fix report, focus on potential antitrust violations and broader concerns about unfair methods of competition in the markets for repair parts and service.<sup>58</sup> Second, they could develop and enforce repair-specific rules to reinforce the Magnuson-Moss Warranty Act.<sup>59</sup> Or third, they could target unfair and deceptive practices related to repair. Although all three approaches have merit, I will focus on the third approach.

In addition to the tactics outlined above, device makers rely on a range of repair restrictions—from software and hardware design to pricing strategies and tightly controlled authorized repair networks—to limit consumers’ access to repair services. I’ve argued elsewhere that these practices satisfy the FTC’s standards for deceptive and unfair practices. A deception claim requires proof of: (1) “a representation, omission, or practice that is likely to mislead the consumer” (2) as evaluated from the perspective of a reasonable consumer, and (3) and “the representation, omission, or practice must be material.” These

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55. See Freedom to Repair Act, H.R. 6566, 117th Cong. (2022); REPAIR Act, H.R. 6570, 117th Cong. (2022); Fair Repair Act, H.R. 4006, 117th Cong. (2022); SMART Act, H.R. 3664, 117th Cong. (2022); Agricultural Right to Repair Act, S. 3549, 117th Cong. (2022).

56. *Nearly 7 in 10 Voters Back Proposed Law That Would Protect the ‘Right to Repair’*, MORNING CONSULT (Mar. 23, 2022, 6:00 AM), <https://morningconsult.com/2022/03/23/right-to-repair-electronic-devices-survey>; David Dayen, *The Day One Agenda Polls Pretty Well*, AM. PROSPECT (Feb. 11, 2020), <https://prospect.org/day-one-agenda/executive-authority-polls-pretty-well>; *Americans’ Views on Right to Repair*, WAVEFORM, <https://www.waveform.com/pages/right-to-repair-april-2020-report> (last visited Sept. 12, 2022).

57. *Executive Order on Promoting Competition in the American Economy*, WHITE HOUSE (July 09, 2021), <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/>.

58. See generally Michael A. Carrier, *How the Federal Trade Commission Can Use Section 5 to Strengthen the Right to Repair*, 37 BERKELEY TECH. L.J. 1145 (forthcoming 2023).

59. See generally, 15 U.S.C. §§ 2301, 2301-2312.

practices, and the failure to disclose them, mislead consumers. They believe that they have the right to repair their devices as they see fit, when in reality, they do not. And that belief, as the empirical evidence demonstrates, is material to consumer purchase decisions.<sup>60</sup> Unless device makers are willing to argue and able to prove that the vast majority of their customers are unreasonable, repair restrictions like those prevalent today implicate the FTC's deception authority.

Even if these practices are not deemed deceptive, they are likely unfair. For a practice to be unfair, the FTC must show: (1) a substantial injury to consumers; (2) that is not outweighed by countervailing benefits; and (3) that is not reasonably avoidable.<sup>61</sup> When firms force consumers to pay inflated prices for authorized repairs, consumers suffer. Likewise, when consumers buy products burdened by unknown repair restrictions, they are injured. We know that easily repairable products are worth more than restricted ones. So consumers are paying an unfair price premium when they unknowingly buy those products.

Device makers argue that their design choices and repair-restrictive policies provide a host of supposed benefits—greater reliability, safety, and security among them. Those benefits are specious, at best. The FTC considered and rejected them in its 2021 report.<sup>62</sup> But even if there is some as-yet-uncovered upside to repair restrictions, the practice of failing to make consumers aware of them at or before the point of purchase offers no plausible countervailing benefit.

Nor are these harms reasonably avoidable. Once a device is purchased, consumers are forced to live with the consequences of repair restrictions. Even before a purchase is made, consumers often enjoy limited choice because of market concentration and the considerable lock-in effects that characterize consumer electronics markets. Perhaps most importantly, consumers cannot be expected to independently research, evaluate, and compare the reparability of each product they consider buying. In much the same way we do not expect every homeowner to test the r-value of competing insulation brands or every shopper to test the snacks at the grocery store for artificial flavors, we should

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60. Even putting that evidence aside, courts presume materiality for claims or omissions that relate to the cost and performance of a product. *See* Fed. Trade Comm'n, FTC Policy Statement on Deception, Opinion Letter (Oct. 14, 1983).

61. *See* Fed. Trade Comm'n, FTC Policy Statement on Unfairness, Opinion Letter (1980).

62. FED. TRADE COMM'N, NIXING THE FIX: AN FTC REPORT TO CONGRESS ON REPAIR RESTRICTIONS (2021), [https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing\\_the\\_fix\\_report\\_final\\_5521\\_630pm-508\\_002.pdf](https://www.ftc.gov/system/files/documents/reports/nixing-fix-ftc-report-congress-repair-restrictions/nixing_the_fix_report_final_5521_630pm-508_002.pdf).

not expect consumers to figure out, on their own, how hard it will be to fix their new smartphone. Repair restrictions of various sorts are likely unfair, and even if they are not, the failure to disclose them is.

A rule requiring manufacturers to provide information about the reparability of their products could take at least two basic forms. First, it might identify a handful of discrete product characteristics or firm policies restricting repair that must be disclosed to consumers. For example, a product with a glued-in battery might trigger a disclosure obligation, as might a product for which key replacement parts aren't made available directly to consumers. Much like artificial colors and flavors in foods, products that include these troubling features would need to prominently disclose them. If a product avoids these pitfalls, manufacturers would be free to stay silent, but could also voluntarily tout their absence. For products that run afoul of multiple reparability standards, we might imagine a matrix of disclosures, noting the variety of ways in which a product is hostile to repair.

Although this approach would be an improvement over the current state of affairs, it runs into some of the problems that can hamper the effectiveness of disclosure regimes. Generally speaking, the longer and more complicated disclosures are, the less impact they have on consumer behavior.<sup>63</sup> We have all encountered voluminous license terms, privacy policies, and terms of service that bury important information in a wall of text. Most of us react the same way. Our eyes glaze over, and we click "Accept." Device makers might respond to an obligation to disclose discrete facts about reparability in a similar way, by designing technically compliant notices that minimize their impact. Beyond that concern, reparability criteria are not typically binary. For any particular product, the ease of disassembly, the availability of parts, and the provision of documentation all fall along a spectrum. That range of conditions does not lend itself to a straightforward yes-or-no determination in the way that the presence of artificial flavors or fur do. Finally, a system that results in an inconsistent assortment of disclosures across products—a few with none, some with one, and most with several—could frustrate comparison shopping,

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63. Mandated disclosure is seen in some corners as a failed approach. See generally Omri Ben-Shahar & Carl E. Schneider, *The Failure of Mandated Discourse*, 159 U. PA. L. REV. 647, (2011). The number, length, and complexity of some disclosures—terms of service, privacy policies, and credit disclosures among them—undermine the central goal of disclosure regimes. *Id.* But when disclosures are simple, easy to understand, and well-timed, they can have a significant impact on consumer understanding and behavior. See Aaron Perzanowski & Chris J. Hoofnagle, *What We Buy When We Buy Now*, 165 U. PA. L. REV. 315, 359 (2017); see also Omri Ben-Shahar & Adam S. Chilton, *Simplification of Privacy Disclosures: An Experimental Test* 25 (Univ. Chi. Coase-Sandor Inst. Law & Econ., Research Paper No. 737, 2016), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2711474](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2711474).

leaving consumers to puzzle over the ultimate question of reparability and undermining the incentives for bringing more repairable products to market.

A repair score along the lines of the French index would avoid these difficulties. It would present consumers with a simple, easy to understand metric. A color-coded score on a 1–10 scale immediately conveys information in an easily digestible and memorable way. The challenging work of evaluating and weighing various product characteristics is done at the front end by the designers of the scoring metric rather than foisting that obligation consumers. For those who want to dig deeper into the constituent components of a product's score, they certainly can. But the rule would not require it. Although it simplifies the process from the consumer perspective, a score allows for more nuance below its surface. Rather than stark binary choices between compliance and non-compliance, a scoring system can recognize finer gradations across a range of product attributes. By offering simple, understandable metrics that are more sensitive to the full spectrum of repair restrictions, repair scores are ultimately more likely to help consumers meaningfully compare products on the basis of reparability.

## V. MANDATED REPAIR SCORES & THE FIRST AMENDMENT

Device makers would likely object that mandatory repair disclosures violate their First Amendment rights to describe and market their products as they see fit. Recent years have seen a number of challenges—occasionally successful—to regulations that compel commercial speech. Disclosure rules around country-of-origin labeling,<sup>64</sup> cigarette warnings,<sup>65</sup> cellular phone radiation,<sup>66</sup> abortion and crisis pregnancy services,<sup>67</sup> and conflict minerals<sup>68</sup> have all come under fire as potential violations of the First Amendment. But for the reasons outlined below, a repair score mandate is very likely to survive such a challenge.<sup>69</sup>

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64. *Am. Meat Inst. v. U.S. Dep't of Agric.*, 760 F.3d 18 (D.C. Cir. 2014).

65. *R.J. Reynolds Tobacco Co. v. FDA*, 696 F.3d 1205 (D.C. Cir. 2012).

66. *CTIA - The Wireless Ass'n v. City of Berkeley*, 928 F.3d 832 (9th Cir. 2019).

67. *Nat'l Inst. of Fam. & Life Advocs. v. Becerra*, 138 S. Ct. 2361, 2366 (2018).

68. *Nat'l Ass'n of Mfrs. v. SEC*, 800 F.3d 518 (D.C. Cir. 2015).

69. This conclusion assumes the Court continues to adhere to precedent in this space. Given its tendency set aside settled law when it suits the Justice's ideological aims and policy preferences, that is far from a guarantee. *See, e.g.*, *Janus v. Am. Fed'n of State, Cnty., & Municipal Emps., Council 31*, 138 S. Ct. 2448 (2018).

Compelled speech is constitutionally suspect.<sup>70</sup> Courts, however, have typically adopted a more forgiving approach to compelled commercial speech, such as product labeling requirements. The rule that emerged has its origins in *Zauderer*, a case that considered allegedly deceptive newspapers advertisements placed by an Ohio attorney.<sup>71</sup> In particular, the state Disciplinary Counsel contended the ads were misleading because they promoted a contingency fee arrangement without disclosing that the client may still be liable for costs, even if they owed no fees.<sup>72</sup> The Court reasoned that the primary value of commercial speech, and by extension, the rationale for its constitutional protection is its informational value to consumers.<sup>73</sup> As a result, an advertiser's interest in withholding factually accurate information is minimal.<sup>74</sup> Under *Zauderer*, compelled commercial speech is permitted if it is: (1) purely factual, (2) uncontroversial, (3) related to a substantial government interest, and (4) not unreasonably burdensome. Applying those elements, repair scores and related disclosures would appear to stand on solid constitutional footing.

The information provided to consumers is purely factual, derived directly from the attributes of the product or the manufacturer's practices. Mandatory disclosure regimes face difficulty on the "purely factual" prong of the *Zauderer* test when the court believes—correctly or not—that the required disclosure is itself inaccurate or misleading.<sup>75</sup> Some regulations have also met with resistance when the disclosures are understood to make emotional rather than factual appeals to consumers, as was the case with graphic imagery used to warn smokers of the dangers of cigarettes.<sup>76</sup>

Similarly, in 2012 the SEC adopted a rule requiring companies to issue reports identifying products that were not "conflict free"—that is, products that contain metals like tantalum, tin, tungsten, and gold originating in the Democratic Republic of the Congo and neighboring countries, where their sale is used to fund armed conflict.<sup>77</sup> The National Association of Manufacturers sued.<sup>78</sup> The D.C. Circuit held that the required disclosure was not purely factual because the "not conflict free" designation was "a metaphor that conveys

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70. *See, e.g.*, *West Virginia State Bd. of Educ. v. Barnette*, 319 U.S. 624 (1943); *Wooley v. Maynard*, 430 U.S. 705 (1977).

71. *Zauderer v. Off. of Disciplinary Couns.*, 471 U.S. 626, 650 (1985).

72. *Id.* at 634–35.

73. *Id.* at 651.

74. *Id.*

75. *See, e.g.*, *Am. Beverage Ass'n v. City & Cnty. of S.F.*, 916 F.3d 749, 766 (9th Cir. 2019).

76. *R.J. Reynolds Tobacco Co. v. Food & Drug Admin.*, 696 F.3d 1205, 1216 (D.C. Cir. 2012).

77. *Conflict Minerals*, 77 Fed. Reg. 56, 274, 56,277–56,278 (Sept. 12, 2012).

78. *See Nat'l Ass'n of Mfrs. v. Sec. & Exch. Comm'n*, 800 F.3d 518 (D.C. Cir. 2015).



moral responsibility.”<sup>79</sup> As the court understood it, the regulation “requires an issuer to tell consumers that its products are ethically tainted [and] compel[s] an issuer to confess blood on its hands.”<sup>80</sup>

In contrast, repair disclosures make no explicit moral judgments. They report—either through factual statements about product design and company policy, or through a transparent scoring rubric—how easily a device can be repaired. While some consumers might draw conclusions about the environmental impact of products on the basis of this information, nothing about the disclosure itself or its presentation casts blame at the feet of device makers.

Even though they are an encapsulation of a variety of distinct product characteristics, repair scores are purely factual. In much the same way that fuel economy ratings are designed to give drivers an estimate of real-world efficiency and a basis for comparisons between models, repair scores offer consumers a single metric by which they can compare devices and predict the difficulty of repairing the range of issues they might face.<sup>81</sup> In that sense, a repair score is no less factual than the EPA miles-per-gallon disclosure.

For some courts, the requirement that the information disclosed be uncontroversial is a natural extension of its factual nature. When a wireless industry trade group sued the City of Berkeley over its mandatory disclosures of radio-frequency radiation from cell phones, for example, the Ninth Circuit rejected the argument that the information was controversial because, according to the court, the disclosure was “factual and not misleading.”<sup>82</sup> But courts have been far from consistent in their treatment of the controversiality element. Some have determined that *Zauderer*’s reference to “purely factual and uncontroversial” disclosures was simply a description of the information at issue in that case rather than a generalizable legal standard.<sup>83</sup> Others have expressed frustration with the uncertainty surrounding the definition of “uncontroversial.”<sup>84</sup>

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79. *Id.* at 530 (quoting Nat’l Ass’n of Mfrs. v. Sec. & Exch. Comm’n, 748 F.3d 359, 371 (D.C. Cir. 2014)).

80. *Id.*

81. *See* 71 Fed. Reg. 77,872, 77,881–88 (Dec. 27, 2006).

82. *CTIA - The Wireless Ass’n v. City of Berkeley, California*, 928 F.3d 832, 848 (9th Cir. 2019).

83. *See Disc. Tobacco City & Lottery, Inc. v. United States*, 674 F.3d 509, 559 n.8 (6th Cir. 2012) (noting “that language instead merely describes the disclosure the Court faced in that specific instance”).

84. *See Am. Meat Inst. v. U.S. Dep’t of Agric.*, 760 F.3d 18, 34 (D.C. Cir. 2014) (Kavanaugh, J., concurring) (noting that “it is unclear how we should assess and what we should examine to determine whether a mandatory disclosure is controversial”); *Kimberly-*

The D.C. Circuit treats the factual and uncontroversial elements as distinct inquiries.<sup>85</sup> Controversiality, as that court understands it, requires something beyond a disagreement about the factual accuracy of the disclosure.<sup>86</sup> It has also made clear that a manufacturer's reluctance to disclose information is not enough to create a controversy.<sup>87</sup> But the cases suggest some circumstances under which an otherwise factual disclosure may be controversial. If it is inflammatory or designed to provoke emotional response, it may be controversial.<sup>88</sup> Likewise, disclosures that suggest a product or producer is ethically tainted may create controversy.<sup>89</sup> More generally, disclosures that express matters of opinion could be deemed controversial.<sup>90</sup>

Unfortunately, the Supreme Court's most recent application of the "noncontroversial" criterion sheds little light on the question.<sup>91</sup> In *National Institute of Family and Life Advocates v. Becerra*, the Court held that *Zauderer* was inapplicable to a California law requiring crisis pregnancy centers to inform patrons of state-sponsored services, including abortions.<sup>92</sup> With barely a hint of analysis, the Court decided the disclosures were "anything but" uncontroversial.<sup>93</sup> The legal and moral status of abortion may well be topics of heated debate, but the question under *Zauderer* ought to focus on whether the factual content of the disclosure, not the services the disclosure references, is controversial.<sup>94</sup> Outside of the abortion context, which occupies a unique place in the current Court's worldview, its cursory classification of California's factual disclosures tells us little about how to evaluate future regulations.

Paralleling the discussion of the factual nature of repair disclosures above, there is little reason to believe discrete factual disclosures or repair scores are controversial. They are not inflammatory or emotionally provocative,<sup>95</sup> nor do

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Clark Corp. v. District of Columbia, 286 F.Supp. 3d 128, 140 (D.D.C. 2017) ("So what does it mean for a disclosure to be 'purely factual and uncontroversial'? Nobody knows exactly.").

85. *Nat'l Ass'n of Mfrs.*, 800 F.3d at 528.

86. *Id.* (quoting *Am. Meat Inst.*, 760 F.3d at 27).

87. *Am. Meat Inst.*, 760 F.3d at 27.

88. *R.J. Reynolds Tobacco, Co. v. Food & Drug Admin.*, 696 F.3d 1205, 1216–17 (D.C. Cir. 2012).

89. *Nat'l Ass'n of Mfrs.*, 800 F.3d at 530.

90. *Kimberly-Clark Corp. v. District of Columbia*, 286 F.Supp. 3d 128, 141 (D.D.C. 2017) (quoting *Zauderer v. Off. of Disciplinary Couns.*, 471 U.S. 626, 651 (1985)).

91. For a thorough effort to make sense of the Court's treatment of controversy, see Seana Valentine Shiffrin, *Compelled Speech and the Irrelevance of Controversy*, 47 PEPP. L. REV. 731 (2020).

92. *Nat'l Inst. of Fam. & Life Advocs. v. Becerra*, 138 S. Ct. 2361, 2366 (2018).

93. *Id.*

94. *Id.* at 2388 (Breyer, J., dissenting).

95. There is good reason to be skeptical of treating disclosures with emotional resonance or appeal as outside the scope of *Zauderer*. As Rebecca Tushnet has argued, when we convey

they assign moral culpability. And they do not, it goes without saying, address abortion. Manufacturers might plausibly argue that repair scores are a matter of opinion. But again, much like EPA fuel-efficiency ratings or r-values for home insulation, repair scores reflect a calculation of factual product attributes using a publicly available set of standards and metrics. They are not subjective expressions of taste or preference.

Even if disclosures are factual and noncontroversial, the government has to articulate a substantial interest to justify compelled commercial speech.<sup>96</sup> Courts have long recognized preventing consumer confusion and deception as substantial interests sufficient to support mandatory disclosures.<sup>97</sup> As detailed above, there is good evidence that manufacturers have engaged in misleading statements and omissions when it comes to reparability. Even short of deception, improving the amount and quality of material information in the marketplace, protecting consumers from unexpected costs, and reducing environmental harm are all significant interests that could be furthered by reparability disclosures.

Finally, *Zauderer* requires the government to show that its required disclosures are not unduly burdensome.<sup>98</sup> So long as the regulation is reasonably related to the state's interest in preventing deception or promoting more informed decision-making, clearing this hurdle is straightforward.<sup>99</sup> In some cases, courts have found burdens unreasonable when they interfere with commercial actors' own speech or otherwise overwhelm product packaging and advertising.<sup>100</sup> A repair score that dominated packaging or advertising

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information, we commonly provoke emotional reactions. *See* Rebecca Tushnet, *More than a Feeling: Emotion and the First Amendment*, 127 HARV. L. REV. 2392, 2422-23 (2014).

96. *Zauderer v. Off. of Disciplinary Couns.*, 471 U.S. 626 (1985).

97. *Id.*; *Milavetz, Gallop & Milavetz, P.A. v. United States*, 559 U.S. 229, 229 (2010).

98. *Zauderer*, 471 U.S. at 651.

99. *See* *Grocery Mfrs. Ass'n v. Sorrell*, 102 F. Supp. 3d 583, 626 (D. Vt. 2015) (citing *Zauderer*, 471 U.S. at 651, 105 S.Ct. 2265; *N.Y. State Rest. Ass'n v. N.Y.C. Bd. of Health*, 556 F.3d 114, 134 (2d Cir. 2009)).

100. *See, e.g., Ibanez v. Fla. Dep't of Bus. & Prof'l Regul.*, 512 U.S. 136, 146-47 (1994) (finding an undue burden where a disclaimer requirement was so lengthy that it "effectively rule[d] out" the ability to use a "specialist" designation on business cards and letterhead); *see also Int'l Dairy Foods Ass'n v. Boggs*, 622 F.3d 628, 649 (6th Cir. 2010) (suggesting that a contiguity requirement for a disclaimer related to the use of artificial hormones on dairy products created an undue burden by limiting producers' ability to convey their own message); *Dwyer v. Cappell*, 762 F.3d 275, 284 (3d Cir. 2014) (finding a regulation that "effectively rules out" the ability to advertise using an accurately quoted judicial statement was an undue burden); *Pub. Citizen, Inc. v. La. Att'y Disciplinary Bd.*, 632 F.3d 212, 229 (5th Cir. 2011) (holding that the combination of "font size, speed of speech, and spoken/written requirements" effectively ruled out certain forms of television, radio, and print advertisements); *Ent. Software Ass'n v. Blagojevich*, 469 F.3d 641, 653 (7th Cir. 2006) (finding

could present an undue burden. But assuming a reasonable implementation in line with the French approach, there's little likelihood of a court deeming the burden on manufacturers too heavy. Device makers may argue that the calculation of the score itself is an undue burden but given their ready access to the information at issue and the relatively straightforward calculations a repair score entails, courts are unlikely to be sympathetic to this claim.

Some courts and commentators have characterized *Zauderer* as merely a particular articulation of the intermediate scrutiny test for commercial speech outlined in *Central Hudson*,<sup>101</sup> rather than a distinct and more forgiving standard uniquely applicable to compelled commercial speech.<sup>102</sup> Even assuming intermediate scrutiny applies, repair scores and related disclosures are still likely in the clear.

The *Central Hudson* test considers whether: (1) the speech concerns lawful activity and is not misleading; (2) the asserted government interest is substantial; 3) the regulation directly advances that interest; and (4) the regulation is no more extensive than necessary.<sup>103</sup> Assuming the speech in question is neither false nor misleading, the Court would then consider government interest at stake in the regulation. As described above, the interest in correcting deceptive or misleading statements and omissions regarding repair is a substantial interest, as is ensuring consumers have access to material information that can help them avoid unforeseen financial costs.<sup>104</sup> *Central Hudson* itself found energy conservation a substantial interest, which suggests reparability disclosures could be justified on environmental grounds as well.<sup>105</sup> With respect to reparability disclosures, there is considerable evidence that consumers incorrectly believe their devices can be repaired as they see fit, that those misconceptions affect their purchasing choices, and that the lack of

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an undue burden where retailers were required to install three large signs in small retail locations).

101. *Cent. Hudson Gas & Elec. Corp. v. Pub. Serv. Comm'n of N.Y.*, 447 U.S. 557 (1980).

102. *Disc. Tobacco City & Lottery, Inc. v. United States*, 674 F.3d 509, 555 (6th Cir. 2012) (“The precise language *Zauderer* used in setting forth the *Central Hudson* test is slightly different than the language in *Central Hudson*, but the import is the same.”). *Am. Meat Inst. v. U.S. Dep’t of Agric.*, 760 F.3d 18, 27–28 (D.C. Cir. 2014) (Kavanaugh, J., concurring) (arguing that “*Zauderer* is best read simply as an application of *Central Hudson*, not a different test altogether”); see also Jonathan H. Adler, *Compelled Commercial Speech and the Consumer “Right to Know”*, 58 ARIZ. L. REV. 421, 436 (2016).

103. *Cent. Hudson Gas & Elec. Corp.*, 447 U.S. at 566.

104. See *supra* text accompanying note 95; see also *BellSouth Telecomms., Inc. v. Farris*, 542 F.3d 499, 507 (6th Cir. 2008); *United States v. Wenger*, 427 F.3d 840, 850 (10th Cir. 2005); Adler, *supra* note 102, at 440 (arguing that informing consumers about the costs of owning and operating products constitutes a substantial government interest).

105. *Cent. Hudson Gas & Elec. Corp.*, 447 U.S. at 568.

reparability harms their economic interests. Evidence of environmental harm flowing from repair restrictions is readily available.<sup>106</sup> In addition, the government must show that the regulation will materially alleviate the identified harms.<sup>107</sup> Again, the evidence outlined above strongly suggests that clear disclosures can help address each of these problems.

Finally, under *Central Hudson* the regulation must be no more extensive than is necessary. While this is a somewhat more stringent standard than *Zauderer*'s "unduly burdensome" standard, it does not demand that the government adopt the least restrictive means.<sup>108</sup> Instead, *Central Hudson* "requires a reasonable fit between the legislature's ends and the means chosen to accomplish those ends, . . . a means narrowly tailored to achieve the desired objective."<sup>109</sup> Unlike a prohibition on advertising tobacco products within 1000 feet of a school or playground, a regulation requiring disclosure of reparability information would be narrowly tailored.<sup>110</sup> It would present information to consumers in the market for particular products at the time and place those facts are most relevant—at the point of purchase, on the company's website, or in its advertisements. A repair index would not prevent Apple or John Deere from marketing their products. It would not force them to foot the bill for a public education campaign about the importance of repair. And it would not force them to redesign their products or change their restrictive policies. It would simply help their customers better understand the terms of the deals they offer. Mandatory disclosures in this context are among the lightest regulatory touches we can expect to have a meaningful impact and hardly the sort of excessive intervention that runs afoul of *Central Hudson*'s fourth prong.<sup>111</sup>

In the end, whether analyzed as compelled commercial speech under *Zauderer* or under the more rigorous *Central Hudson* approach, mandated disclosure of reparability information is fully consistent with the First Amendment.

Greater transparency about reparability is essential if we expect markets for consumer goods from cars to smartphones to function efficiently. Consumers want to know more about the difficulty of repairing products and

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106. See PERZANOWSKI, *supra* note 1.

107. *Edenfield v. Fane*, 507 U.S. 761, 771 (1993).

108. See, e.g., *Bd. of Trustees of State Univ. of N.Y. v. Fox*, 492 U.S. 469, 480 (1989).

109. *Lorillard Tobacco Co. v. Reilly*, 533 U.S. 525, 555 (quotations omitted).

110. *Id.*

111. *Bd. of Trustees of State Univ. of New York v. Fox*, 492 U.S. 469, 479 (1989) (noting "almost all of the restrictions disallowed under *Central Hudson*'s fourth prong have been substantially excessive, disregarding 'far less restrictive and more precise means'" (quoting *Shapero v. Ky. Bar Ass'n*, 486 U.S. 466, 476 (1988))).

are prepared to send strong market signals through shifts in their behavior. Regulation can empower them to take greater control of their relationships with device repair. But as necessary and valuable as repair scores are, disclosures alone cannot solve all of the challenges created by device makers' restrictions on repair. There is a range of promising interventions beyond disclosure: more aggressive interpretation and enforcement of antitrust law and competition policy,<sup>112</sup> limiting the subject matter and scope of intellectual property rights,<sup>113</sup> and enacting targeted state and federal legislation.<sup>114</sup> But some practices may require more direct intervention to eliminate inherently unfair practices. Because of market concentration and high degrees of consumer lock-in, a heavier regulatory hand might be necessary to prohibit some of the more egregious repair restrictions. Part pairing and serialization—the technique of tying individual parts to devices so that equivalent replacements produced by the original manufacturer will not function—is one. Manufacturing devices without replaceable batteries is another. And device makers' refusal to sell design patented and other repair parts is yet a third.<sup>115</sup> While these calls for more aggressive regulation of repair restrictions are unlikely to be embraced anytime soon, mandatory repair scoring would be an important first step towards restoring consumer control over the things they own.

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112. See Carrier, *supra* note 58; PERZANOWSKI, *supra* note 1.

113. PERZANOWSKI, *supra* note 1.

114. See H.R. 3664, 117th Cong. (2022); S. 3549, 117th Cong. (2022); H.R. 4006, 117th Cong. (2022); H.R. 6566, 117th Cong. (2022); H.R. 6570, 117th Cong. (2022); Nathan Proctor, *Half of U.S. states looking to give Americans the Right to Repair*, PIRG (Mar. 10, 2021), <https://uspirg.org/blogs/blog/usp/half-us-states-looking-give-americans-right-repair>.

115. See Joshua D. Sarnoff, *How the FTC Could, but Won't, Use Its Rulemaking Authority to Allow Aftermarket Parts*, TRUTH ON MKT. (May 10, 2022), <https://truthonthemarket.com/2022/05/10/how-the-ftc-could-but-wont-use-its-rulemaking-authority-to-allow-aftermarket-parts>.